

Permit Fact Sheet

General Information

Permit Number:	WI-0066851-01-0
Permittee Name:	Draves Dairy, LLC
Address:	6036 State Road 80
City/State/Zip:	Highland WI 53543
Discharge Location:	6036 State Road 80, Highland WI 53543
Receiving Water:	Sixmile Branch and tributaries to the Blue River in the Blue River Watershed and Morrey Creek in the City of Spring Green-Wisconsin River Watershed

Animal Units					
Animal Type	Current AU		Proposed AU (Note: If all zeroes, expansions are not expected during permit term)		
	Mixed	Individual	Mixed	Individual	Date of Proposed Expansion
Dairy Calves (under 400 lbs.)	30	0	40	0	12/31/2022
Milking and Dry Cows	805	822	1400	1430	12/31/2022
Heifers (400 lbs. to 800 lbs.)	90	150	0	0	12/31/2022
Total	925	822	1440	1430	

Facility Description

Draves Dairy is a Concentrated Feeding Operation (CAFO) that is owned and operated in partnership by Mike, Sheila, Jacob, and Joshua Draves. Since the size of this operation exceeded 1,000 animal units as defined in Ch. NR 243, Wis. Adm. Code, an application was required for issuance of a Wisconsin Pollutant Discharge Elimination System (WPDES) permit. Draves Dairy, LLC has submitted the required complete permit application, engineering evaluations, Nutrient Management Plan (NMP), and other information to the Department. The proposed operating permit will have a duration of approximately five years with a proposed expiration date of December 31, 2026. This will be the first WPDES permit issuance for the facility, or for the owners.

The Dairy had a herd size of 975 mixed animal units at the beginning of the WPDES permit application process and has a planned herd size of 1440 mixed animal units by the end of 2022. The operation is located on a single site in the town of Highland. The production area includes a milking parlor, calf hutch area, six roofed animal confinement barns, 3 freestall barns, an existing manure storage facility, one newly constructed waste storage facility, a new waste storage facility under construction, a planned solid stacking area, and a feed storage area.

Requirements are included in the operation's proposed permit for the waste storage structures and feed storage area. Further evaluation and possible upgrades may be necessary for the existing waste storage facility and calf hutch area. Upgrades are planned for the feed storage area and an associated runoff collection system, and requirements to document the completion of the construction of the two reviewed and approved liquid waste storage facilities and one reviewed and approved solid waste storage area are included in the proposed permit. Operational and built interim runoff control practices will be built and maintained until systems are upgraded as indicated by the proposed permit. Draves Dairy, LLC currently has a total of 1,264 acres (603 owned and 661 rented) and 1,236 acres are available for land application of manure and process wastewater.

Listed below are the sample points which provide additional information about the farm and represent places where sampling, monitoring, or visual observations may be required.

Sample Point Designation For Animal Waste		
Sample Point Number	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)	
001	001 WSF1 – Sample Point 001 is for liquid waste storage facility 001 (WSF1) located west of Freestall Barn #2. WSF1 is a liquid-tight, concrete, first-stage waste storage facility that transfers waste to WSF2 via overflow transfer pipes. WSF1 has a maximum operating level of approximately 1 million gallons and receives parlor waste from one of two reception tanks located to the west of the parlor which are pumped manually after each milking. Waste from Freestall Barn #3 is transferred to a 5,000 gallon holding tank under the southwest corner of the barn which is directed to WSF1 along with animal waste from Freestall Barn #1. Manure from Freestall Barn #1 is also pushed out into a portable tank which is then transported to WSF1. An additional 20,000 gallon tank to be located under the southwest corner of Freestall Barn #1 and an associated transfer to WSF1 will be constructed in 2022, and will receive waste from the 5,000 gallon tank and Freestall Barn #1 to be routinely agitated before being pumped into WSF1. Manure is pushed into WSF1 from Freestall Barn #2 using a concrete drive lane southwest of the barn. A proposed solid stacking area (Sample Point 004) will also drain waste into WSF1. Some waste collected from additional animal housing will be stored on the ramp on the northeast corner of WSF1 when not directly land applied, prior to the construction of the stacking pad. WSF1 was constructed in 2012 and the facility along with its associated transfer system will require additional engineering evaluation, see Schedules section of the permit.	
002	002 WSF2 – Sample Point 002 is for the second-stage liquid waste storage facility 002 (WSF2- Pipping 1) located south of WSF1. WSF2 was constructed in 2021 with department review and approval (June 18th, 2021 Conditional Approval Letter R-2021-0066). The concrete pipping tank receives waste from WSF1 via two overflow pipes. Some waste collected from additional animal housing will be stored on a concrete ramp draining into WSF2 when not directly land applied. WSF2 has a maximum operating level of approximately 5.4 million gallons and will require post construction documentation, see Schedules section of the permit.	
003	003 WSF3 – Sample Point 003 is for the third-stage liquid waste storage facility 003 (WSF3- Pipping 2) located west of WSF1. The concrete pipping tank receives waste from WSF2 via two equalizer pipes and has a maximum operating level of approximately 4.5 million gallons. Some waste collected from additional animal housing will be stored on a concrete ramp that drains into WSF3 when not directly land applied. Plans and specifications for WSF3 were reviewed and approved by the department (June 18th, 2021 Conditional Approval Letter R-2021-0066), and the facility is anticipated to be completely constructed by spring of 2022. WSF3 will require post construction documentation, see Schedules section of the permit.	
004	004 WSF4 – Sample Point 004 is for the proposed, concrete solid stacking pad to be constructed along the eastern edge of WSF1. The pad is planned to be approximately 32'x146' and to slope towards the pushout	

Sample Point Designation For Animal Waste		
Sample Point Number	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)	
	channel on Freestall Barn #2. Solid waste from additional animal housing will be stored in this area, and runoff will be directed to WSF2 via a 12" transfer in the floor on the southern portion the pad. Plans and specifications for this facility were reviewed and approved by the department (June 18th, 2021 Conditional Approval Letter R-2021-0066) and it is anticipated to be completely constructed by 2022. This facility will require post construction documentation, see Schedules section for due dates.	
005	005 Miscellaneous Solid Manure – Sample point 005 is for solid manure sources that are directly land applied and not stored in a waste storage facility. This includes solid sources such as calf hutch manure, maternity pen bedpack, heifer bedpack, steer manure, etc, from Heifer Barn #1, Close up Dry Cow/Maternity Barn, Weened Calves Area (group calf housing), the Old Barn, Calf Barn, Calf Hutch Area, South Barn, solids removed from liquid waste storage facilities, etc. Representative samples shall be taken for each manure source type.	
006	006 Headland Stacking Sites – Sample point 006 is for solid manure land applied from approved headland stacking sites. Stacks are defined as part of the production area and therefore subject to the production area discharge limitations section of this permit. Quarterly inspections while stacks are present are required and shall be recorded according to monitoring program.	
007	007 Feed Storage Area Runoff Controls – Sample point 007 is for visual monitoring and inspection of the current feed storage area and the planned interim runoff control system located on the east side of State Road 80. Proper operation and maintenance is required to ensure discharges meet permit requirements. Weekly inspections are required and shall be recorded according to monitoring program. An engineering evaluation of the existing feed storage area and runoff control system was submitted and reviewed in 2021, and it was determined that plans and specifications for upgrades will be required, see Schedules section of the permit.	
008	008 Storm Water Runoff Control System – Sample point 008 is for visual monitoring and inspection of all production site storm water conveyance systems. This includes roof gutter and downspout structures, drainage tile systems, grassed waterways and other diversion systems that transport uncontaminated storm water. Proper operation and maintenance is required to keep uncontaminated runoff diverted away from manure and process wastewater handling systems. Weekly inspections are required and shall be recorded according to the monitoring and inspection program.	
009	009 Calf Hutch Area Runoff Control – Sample point 009 is for visual monitoring and inspection of the calf hutch area and associated runoff control system. Proper operation and maintenance is required to ensure discharges meet permit requirements. Weekly inspections are required and shall be recorded according to monitoring program. An engineering evaluation of the calf hutch area and runoff control system shall be submitted according to the Schedules section of the permit.	
010	010 Feed Storage Collection – Sample Point 010 is for the feed storage area collection located on the east side of State Road 80. Representative samples shall be taken prior to land application. Engineering requirements for this facility are included in the Schedules Section.	

1 Livestock Operations - Proposed Operation and Management

Production Area Discharge Limitations

Beginning on the effective date of the permit, the permittee may not discharge pollutants from the operation's production area (e.g., manure storage areas, outdoor animal lots, composting and leachate containment systems, milking center wastewater treatment/containment systems, raw material storage areas) to navigable waters, except in the event a 25-year, 24-hour rainfall event (or greater) causes the discharge from a structure which is properly designed and maintained to contain a 25-year, 24-hour rainfall event for this location as determined under s. NR 243.04. If an allowable discharge occurs from the production area, state water quality standards may not be exceeded.

Runoff Control

The permit requires control of contaminated runoff from all elements of the production area to prevent a discharge of pollutants to navigable waters in accordance with the Production Area Discharge Limitations and to comply with surface water quality standards and groundwater standards. Beginning on the effective date of this permit, (if needed) interim measures shall be implemented to prevent discharges of pollutants to navigable waters. In addition, permanent runoff control system(s) shall be designed, operated and maintained in accordance with the requirements found in USDA Natural Resources Conservation Service standards and ch. NR 243, Wis. Adm. Code. If any upgrading or modifications to runoff controls are necessary, formal engineering plans and specifications must be submitted to the Department for approval.

Manure and Process Wastewater Storage

The permit requires the operation to have adequate storage for manure and process wastewater and that storage or containment facilities are designed, operated and maintained to prevent overflows and discharges to waters of the state. In order to prevent overflows, the permittee must maintain levels of materials in liquid storage or containment facilities at or below certain levels including a one foot margin of safety that can never be exceeded. If any upgrading or modifications to the storage facilities are necessary, formal engineering plans and specifications must be submitted to the Department for approval.

The permittee will have approximately 207 days of storage for liquid manure with the existing and second stage waste storage facilities, and will have approximately 336 days of storage after the completion of a third stage manure storage facility. The permittee must maintain 180 days of storage, unless temporary reductions in required storage are approved by the Department.

Solid Manure Stacking

The operation has proposed to stack solid manure. All stacking of solid manure shall be done in accordance ch. NR 243, Wis. Adm. Code, which includes restrictions from NRCS Standard 313. Stacking of manure is considered to be part of the production area and is subject to the Production Area Discharge Limitations.

Ancillary Service and Storage Areas

The permittee shall take preventative maintenance actions and conduct visual inspections to minimize pollutant discharges from areas of the operation that are not part of the production area or land application areas. These areas are called ancillary service and storage areas and include access roads, shipping and receiving areas, maintenance areas, refuse piles and CAFO outdoor vegetated areas.

Nutrient Management

With a herd size of 975 animal units (575 milking & dry cows, 150 heifers, and 150 calves) and a planned herd size of 1440 animal units (1000 milking & dry cows and 200 calves) by the end of 2022, it is estimated that approximately 11,821,665 gallons of manure and process wastewater and 207 tons of solid manure will be produced in the first year of the permit term. The permittee owns *approximately* 603 acres of cropland and rents about 661 acres. Given the rotation

commonly used by the permittee, 1,236 acres are available (or open) to receive manure and process wastewater on an annual basis. The permit requires all landspreading of manure and process wastewater be completed in accordance with an approved nutrient management plan. The permit will require sampling and analysis of manure and process wastewater that will be landspread. Landspreading rates must be adjusted based on sample analysis. The permit requires the permittee to maintain a daily log that documents landspreading activities. The permit also requires the submittal of an annual report that summarizes all landspreading activities. Plans must be updated annually to reflect cropping plans and other operational changes. Among the requirements, the plans must include detailed landspreading information including field by field nutrient budgets.

The permittee is required to implement a number of practices to address potential water quality impacts associated with the land application of manure and process wastewater. Among the permit conditions are restrictions on manure ponding, restrictions on runoff of manure and process wastewater from cropped fields, and setbacks from wells and direct conduits to groundwater (e.g., sinkholes, fractured bedrock at the surface). In addition, the permittee must implement a phosphorus based nutrient management plan that addresses phosphorus delivery to surface waters by basing manure and process wastewater applications on soil test phosphorus levels or the Wisconsin Phosphorus index. Additional phosphorus application restrictions apply to fields that are high in soil test phosphorus (>100 ppm).

The permittee must also implement conservation practices when applying manure near navigable waters and their conduits, referred to as the Surface Water Quality Management Area (SWQMA). These practices include a 100-foot setback from navigable waters and their conduits, a 35-foot vegetated buffer adjacent to the navigable water or conduit, or a practice that provides equivalent pollutant reductions equivalent to or better than the 100-foot setback.

In addition, the permittee must comply with restrictions on land application of manure and process wastewater on frozen or snow-covered ground. Included in these restrictions is a prohibition on surface applications of solid manure ($\geq 12\%$ solids) on frozen or snow-covered ground during February and March. Beginning March 1st, 2022, non-emergency surface applications of liquid manure (<12%) on frozen or snow-covered ground are prohibited.

Monitoring and Sampling Requirements

The permittee must submit a monitoring and inspection program that outlines how the permittee will conduct self-inspections to determine compliance with permit conditions. These self-inspections include visual inspections of water lines, diversion devices, storage and containment structures and other parts of the production area. The permit requires periodic inspections and calibrations of landspreading equipment. The permittee must take corrective actions to problems identified inspections or otherwise notify the Department. Samples of manure, process wastewater and soils receiving land applied materials from the operation must also be collected and analyzed.

Sampling Points

The permit identifies the different sources of land applied materials (e.g., manure storage facilities, milking centers, egg-washing facilities) as “Sampling Points.” For these Sampling Points, the permittee is required to sample and analyze the different sources for nutrients and other parameters which serve as the basis for determining rates of application for these materials. Other areas are also identified as Sampling Points as a means of identifying them as areas requiring action by the permittee, such as an upgrade or evaluation of a certain system or structure (e.g., runoff control systems), even though sampling is not actually required.

Sample Point Number: 001- WSF1 ; 002- WSF2- Pipping 1; 003- WSF3- Pipping 2, and 010- Feed Storage Collection

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Total		lb/1000gal	2/Month	Grab	
Nitrogen, Available		lb/1000gal	2/Month	Calculated	
Phosphorus, Total		lb/1000gal	2/Month	Grab	
Phosphorus, Available		lb/1000gal	2/Month	Calculated	
Solids, Total		Percent	2/Month	Grab	

1.1.1 Explanation of Operation and Management Requirements

Liquid wastes shall be sampled according to the table above. Land application shall occur in accordance with the operation's approved nutrient management plan.

Sample Point Number: 004- WSF4- Stacking Pad; 005- Misc. Solids; 006- Headland Stacking

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Total		lbs/ton	Quarterly	Grab	
Nitrogen, Available		lbs/ton	Quarterly	Calculated	
Phosphorus, Total		lbs/ton	Quarterly	Grab	
Phosphorus, Available		lbs/ton	Quarterly	Calculated	
Solids, Total		Percent	Quarterly	Grab	

1.1.2 Explanation of Operation and Management Requirements

Solid wastes shall be sampled according to the table above. Land application shall occur in accordance with the operation's approved nutrient management plan.

Sample Point Number: 007- Feed Storage Runoff; 008- Stormwater , and 009- Calf Hutch Area Runoff

1.1.3 Explanation of Operation and Management Requirements

Runoff control systems shall be monitored and inspected in accordance with the operation's monitoring and inspection program. Monitoring results shall be recorded and submitted annually by January 31.

2 Schedules

2.1 Monitoring & Inspection Program

Use of the department's monitoring and inspection program template is encouraged, but optional.

Required Action	Due Date
Proposed Monitoring and Inspection Program: Consistent with the Monitoring and Sampling Requirements subsection, the permittee shall submit a proposed monitoring and inspection program within 30 days of the effective date of this permit.	04/01/2022

2.2 Emergency Response Plan

Required Action	Due Date
Develop Emergency Response Plan: Develop a written Emergency Response Plan within 30 days of permit coverage, available to the Department upon request.	04/01/2022

2.3 Nutrient Management Plan

Submit annual nutrient management plan (NMP) updates by March 31 of each year. Note, in addition to annual NMP updates, submit NMP amendments and substantial revisions to the department for written approval prior to implementation of any changes to the NMP.

Required Action	Due Date
Management Plan Submittal: Submit any necessary updates to the Nutrient Management Plan to meet the conditions outlined in this permit (see conditions in the Livestock Operational and Sampling Requirements section),	04/01/2022
Management Plan Annual Update #1: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	03/31/2023
Management Plan Annual Update #2: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	03/31/2024
Management Plan Annual Update #3: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	03/31/2025
Management Plan Annual Update #4: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	03/31/2026
Ongoing Management Plan Annual Updates: Continue to submit Annual Updates to the Nutrient Management Plan until permit reissuance has been completed, to include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D.	

2.4 Annual Reports

Submit Annual Reports by January 31st of each year in accordance with the Annual Reports subsection in Standard Requirements.

Required Action	Due Date
Submit Annual Report #1: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2023
Submit Annual Report #2: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2024
Submit Annual Report #3: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2025
Submit Annual Report #4: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2026
Ongoing Annual Reports: Continue to submit Annual Reports until permit reissuance has been completed, to include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	

2.5 Permanent Markers - Installation

Required Action	Due Date
Plans and Specifications: For liquid storage facilities without permanent markers specified in s. NR 243.14(9), Wis. Adm. Code, submit plans and specifications to install permanent markers for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code.	06/30/2022
Complete Installation: Complete installation of permanent markers. The facility shall be functional and in operation by the specified Date Due. Post construction documentation shall be submitted within 60 days of completion of the project.	12/01/2022

2.6 WSF1 - Engineering Evaluation

These requirements pertain to WSF1 and the associated transfer system as referenced in the September 29th, 2021 Revised Further Actions Review letter (R-2021-0120a).

Required Action	Due Date
Written Report: Submit a written report addressing the September 29th, 2021 "Revised Evaluation Review... Further Actions Are Required" letter R-2021-0120a to further evaluate the existing manure storage facility and associated transfer system's ability to meet the conditions in the Production Area Discharge Limitations and Manure and Process Wastewater Storage subsections and s. NR 243.15, Wis. Adm. Code. (See Standard Requirements for report details.)	12/01/2022
Plans and Specifications: If needed, submit plans and specifications for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code, to permanently correct any adverse manure storage conditions.	04/30/2023
Corrections and Post Construction Documentation: If needed, complete construction on the manure storage facility that permanently corrects any adverse conditions in concurrence with and approval by the Department, by the specified Date Due. Submit post construction documentation within 60 days	12/01/2023

of completion of the project.	
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2.7 WSF2 , WSF3, WSF4 (stacking pad) - Engineering Evaluation

These requirements pertain to Pipping-1, Pipping-2, their associated transfer systems, and the solid stacking pad. These facilities are/will be under construction in the fall of '21 and winter of '21-'22, and plans were reviewed and approved (June 18th, 2021, Conditional Approval Letter R-2021-0066)

Required Action	Due Date
Corrections and Post Construction Documentation: Complete construction on the manure storage facilities that permanently corrects any adverse conditions in concurrence with and approval by the Department, by the specified Date Due. Submit post construction documentation within 60 days of completion of the projects.	09/01/2022

2.8 Calf Hutch Area - Engineering Evaluation

Required Action	Due Date
Written Description of Existing System: Submit a written description of the existing calf hutch area and associated runoff control system and its adequacy to permanently meet the conditions in the Production Area Discharge Limitations and Runoff Control subsections and s. NR 243.15, Wis. Adm. Code. (See Standard Requirements for report details.)	03/30/2022
Plans and Specifications: Submit plans and specifications for Department review and approval to permanently correct any adverse runoff control conditions in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code.	06/30/2022
Corrections and Post Construction Documentation: Complete construction of runoff controls that permanently correct any adverse runoff control conditions in concurrence with and approval by the Department, by the specified Date Due. Submit post construction documentation within 60 days of completion of the project.	12/01/2023

2.9 Feed Storage Area and Runoff Controls - Abandonment

The existing runoff collection system must be abandoned and/or upgraded into interim controls to address the Sept. 29th, 2021 Further Actions Review letter (R-2021-0120a)

Required Action	Due Date
Abandonment Plan: Submit an abandonment plan for the leachate collection basin to the Department for approval in accordance with USDA Natural Resource Conservation Services Technical Guide, Section IV, Standard 360 outlining the proposed method of abandonment/closure or an improvement plan of this facility if basin is upgraded for interim controls. This plan shall include the submittal of additional details on proposed interim practices as well as the abandonment/upgrade of the unmanaged collection basin and areas adjacent to the basin as identified as part of the September 29th, 2021 "Revised Evaluation Review... Further Actions Are Required" letter R-2021-0120a.	06/30/2022
Install and Maintain Interim Feed Storage Runoff Control Practices: Complete abandonment as approved by the Department. Feed storage Runoff Control interim practices shall be installed and maintained until permanent runoff controls are installed.	09/01/2022

2.10 Feed Storage - Engineering Evaluation

These requirements pertain to the installation of a new feed storage area and runoff collection system to address the Sept. 29th, 2021 Further Actions Required Review letter R-2021-0120a.

Required Action	Due Date
Plans and Specifications: Submit plans and specifications for department review and approval to permanently correct any adverse conditions as specified in the department's "Revised Evaluation Review... Further Actions Are Required" letter R-2021-0120a for the entire feed storage area and the associated runoff control system in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code.	04/30/2023
Corrections and Post Construction Documentation: Complete construction of improvements to permanently correct any adverse conditions in concurrence with and approval by the Department, by the specified Date Due. Submit post construction documentation within 60 days of completion of the project.	07/31/2024

2.11 Manure Storage Facility - Engineering Evaluation or Abandonment

This requirement pertains to the manure storage located 1 mile north of the production area associated with rented animal housing and manure storage. An abandonment plan may be submitted in lieu of an engineering evaluation or plans and specifications.

Required Action	Due Date
Written Report: Submit a written report evaluating the existing manure storage facility's ability to meet the conditions in the Production Area Discharge Limitations and Manure and Process Wastewater Storage subsections and s. NR 243.15, Wis. Adm. Code. (See Standard Requirements for report details.)	03/30/2022
Plans and Specifications: If needed, submit plans and specifications for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code, to permanently correct any adverse manure storage conditions.	06/30/2022
Corrections and Post Construction Documentation: If needed, complete construction on the manure storage facility that permanently corrects any adverse conditions in concurrence with and approval by the Department, by the specified Date Due. Submit post construction documentation within 60 days of completion of the project.	06/30/2023

2.12 Submit Permit Reissuance Application

Required Action	Due Date
Reissuance Application: Submit a complete permit reissuance application 180 days prior to permit expiration.	07/01/2026

2.13 Explanation of Schedules

Schedules sections 2.1, 2.2, 2.3, 2.4 and 2.12 are typical for all CAFO permittees. Section 2.5 is required because permanent markers for waste storage facilities need to reflect inputs from interim controls to be installed for the feed storage area and completion of WSF2 and WSF3. Section 2.6 is required because department review of the evaluation of WSF1 submitted with the permit application requires further evaluation. Depending on the review,

upgrades may be necessary for WSF1. Section 2.7 is required to document the installation of WSF2, WSF3 and WSF4 (solids stacking pad) and to submit post construction documentation to the Department. Section 2.8 is required because the calf hutch area was not evaluated as part of the permit application. Depending on the review, upgrades may be necessary for the calf hutch area. Section 2.9 is required to abandon the existing feed storage runoff collection system. Section 2.10 is required because Department review of the feed storage area evaluation submitted with the permit application indicated that this facility will require upgrades. Section 2.11 is required because this facility was not included in the permit application. Draves Dairy will need to submit an evaluation of the facility to continue use or submit an abandonment plan. Section 2.12 is a standard requirement for all CAFO permittees.

Attachments:

Maps

Plan Approval Letters

Proposed Expiration Date:

December 31, 2026

Prepared By:



Claire O'Connell

Agricultural Runoff Management Specialist

(608) 963-1463

Claire.OConnell@wisconsin.gov

Date: 12/15/2021

CUT/FILL NOTES:

1. CUT/FILL NUMBERS ARE TO FINISHED ELEVATION AND DO NOT ACCOUNT FOR THE VOLUME OF CONCRETE, GRANULAR MATERIAL, OR SUB-LINER.

2. CUT FACTOR: 1.0; FILL FACTOR 1.3

3. AN OVEREXCAVATION OF BEDROCK WILL BE REQUIRED TO ACHIEVE 2.5' OF SEPARATION FROM THE TOP OF CONCRETE TO THE TOP OF BEDROCK.

OVERALL TOTAL FOR SITE:
CUT: 33,295 CY
FILL: 33,890 CY
NET (FILL): 595 CY

BARN:
CUT: 3,630 CY
FILL: 3,475 CY
NET (CUT): 155 CY

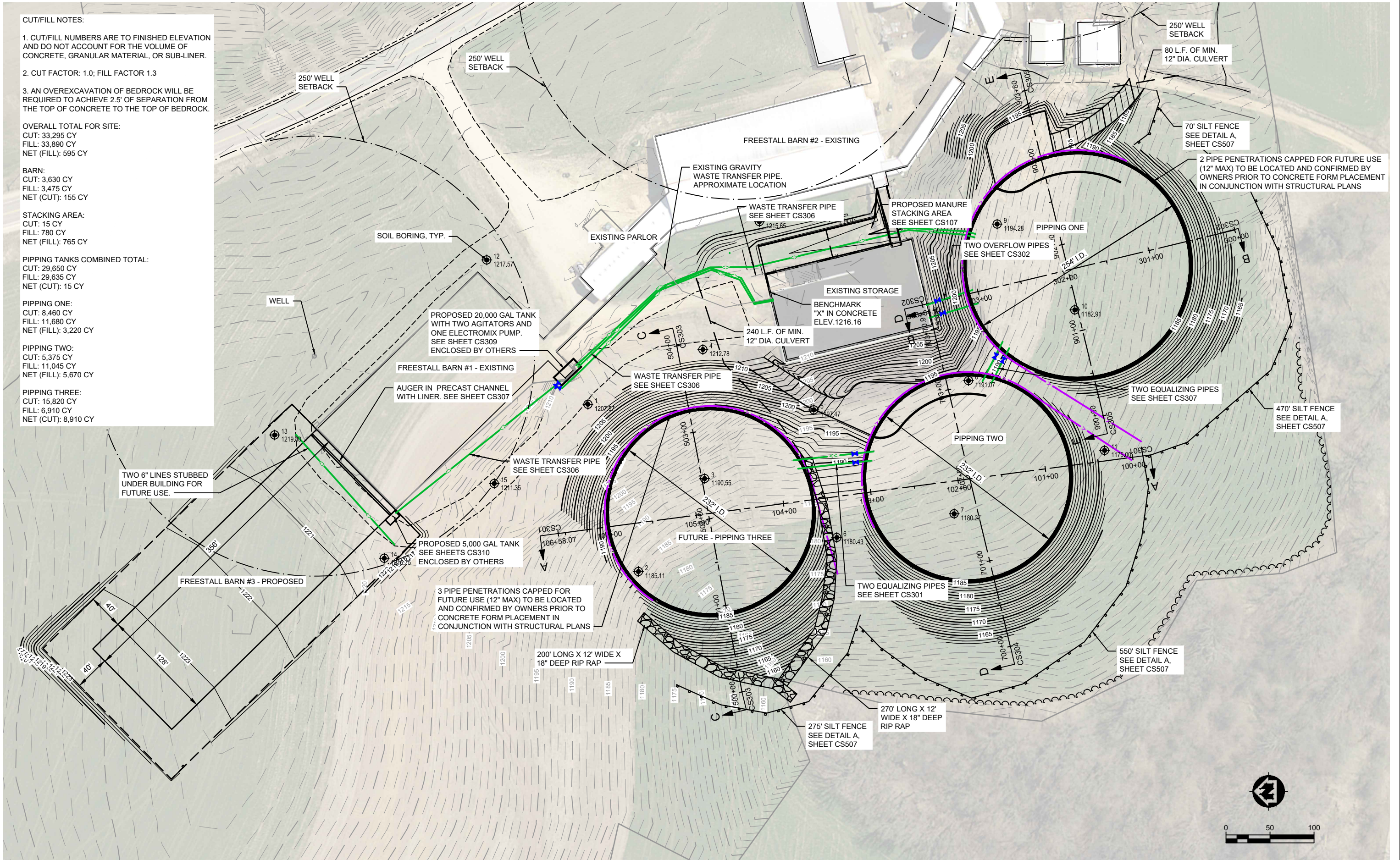
STACKING AREA:
CUT: 15 CY
FILL: 780 CY
NET (FILL): 765 CY

PIPPING TANKS COMBINED TOTAL:
CUT: 29,650 CY
FILL: 29,635 CY
NET (CUT): 15 CY

PIPPING ONE:
CUT: 8,460 CY
FILL: 11,680 CY
NET (FILL): 3,220 CY

PIPPING TWO:
CUT: 5,375 CY
FILL: 11,045 CY
NET (FILL): 5,670 CY

PIPPING THREE:
CUT: 15,820 CY
FILL: 6,910 CY
NET (CUT): 8,910 CY



PROJECT DATE:	DRAWN BY:	NO.	DATE	REVISION	BY:
4/26/2021 12:11 PM	Init	-	-	-	-
	DESIGNED BY:	Init	-	-	-
	CHECKED BY:	Init	-	-	-

PLOT DATE: 4/26/2021 12:11 PM, G:\20\20770\20770000\CADD\Construction Documents\20770000 Draves Dairy Proposed Site.dwg



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EXPANSION AND MANURE SYSTEM UPGRADES
DRAVES DAIRY
IOWA COUNTY, WI

PROPOSED SITE OVERVIEW

PROJECT NO:
20770000
SHEET
CS101



PROJECT DATE:	DRAWN BY:	NO.	DATE	REVISION	BY:
	Init	-	-		-
	DESIGNED BY:	Init	-		-
	CHECKED BY:	Init	-		-

PLOT DATE: 5/3/2021 3:34 PM, G:\20\20770\20770000\CADD\Construction Documents\20770000 Verification boring map.dwg



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EXPANSION AND MANURE SYSTEM UPGRADES
DRAVES DAIRY
IOWA COUNTY, WI

20770000 Verification boring map - Verification Boring Layouts

PROJECT NO:
20770000
SHEET



December 6, 2021

Iowa County
Approval

Josh Draves
Draves Dairy
6036 State Road 80
Highland, WI 53543

SUBJECT: Conditional Approval of Draves Dairy Nutrient Management Plan, WPDES Permit No. 0066851-01-0

Dear Mr. Draves:

After completing a review of Draves Dairy 2022-2025 Nutrient Management Plan (NMP) the Wisconsin Department of Natural Resources (Department) is providing conditional approval that it is consistent with Nutrient Management Requirements in s. NR 243, Wis. Adm. Code. This part of your WPDES permit application is now ready for the public notice and comment process as required by Ch. 283 Stats.

Before applying manure onto approved fields each season, the Department recommends Draves Dairy review the NMP with individuals involved with manure applications to ensure all are familiar with the approved manure spreading practices, spreading map restrictions, required field verifications, record keeping requirements, and conditions of this approval. Specifically, some fields in Draves Dairy may have:

- Soils with bedrock or seasonal perched water conditions within 24 inches of surface,
- Setback requirements due to streams, conduits to streams (such as man-made channels or road ditches), grassed waterways, wetlands, or wells,
- Evidence of soil erosion/flow channels.

Reviewing the NMP and checking fields for these features and soil conditions prior to manure applications will help Draves Dairy maintain compliance with their WPDES permit and Ch. NR 243 requirements.

FINDINGS OF FACT

The Department confirms that:

1. A dairy herd size of 975 animal units (575 milking & dry cows, 150 heifers, and 150 calves) at the beginning of the application process. A planned herd size of 1440 animal units (1000 milking & dry cows and 200 calves) by the end of 2022.
2. Manure generation and spreading records indicate your herd will annually generate approximately 11,821,665 gallons of manure and process wastewater and 207 tons of solid manure in the first year of the permit term.
3. The use of application restriction options 1 and 5 within surface water quality management areas.
4. The use of phosphorus delivery method P Index.
5. That Draves Dairy currently has 1264 acres (603 owned and 661 controlled through contracts, rental agreements, or leases, or under manure agreements) of which 1,236 are spreadable acres.

6. That no fields are directly adjacent to or have high potential to deliver nutrients and sediment to a 303(d) impaired water.
7. That no fields are directly adjacent to or have high potential to deliver nutrients and sediment to outstanding/exceptional waters.
8. That no fields included in the NMP are located within a well head protection area
9. That no fields are tiled.
10. That all fields will be checked for the following features prior to/during manure or process wastewater applications:
 - soil areas with possible perched water conditions within 24 inches of surface (“W” soils) at the time of manure application
 - required setbacks associated with wells, navigable waters, conduits to navigable waters, grassed waterways, and wetlands
 - soil erosion/flow channels.
11. That surface applications of manure will not be completed when precipitation capable of producing runoff is forecasted within 24 hours of the time of planned application.

CONDITIONAL NUTRIENT MANAGEMENT PLAN APPROVAL

The Department hereby approves the 2022-2025 Draves Dairy Nutrient Management Plan subject to the following conditions and the applicable requirements of Ch. NR 243, Wis. Adm. Code:

FIELD AND MANURE MANAGEMENT

1. Fields not included in the NMP and new fields shall not receive manure or process wastewater applications until they have been properly soil sampled, entered in Snap Plus, evaluated for nutrient needs, and approved by the Department.
2. The following fields are prohibited from receiving applications of manure or process wastewater, unless the condition listed is corrected prior to proposed applications:
 - Soil test levels above 100 ppm and planned rotation phosphorus applications exceed 50% of crop need – 14023-31, 1306-2, 1276-16

If Draves Dairy wishes to use these fields for applications of manure or process wastewater, all necessary information shall be submitted to the Department prior to application to demonstrate compliance with NR 243 and other applicable codes.

3. If an existing fields soil test phosphorus levels are equal to or greater than 200 ppm P, those fields would be prohibited from receiving manure or process wastewater applications, unless you obtain Department approval in accordance with NR 243.14(5)(b)2., Wis. Adm. Code.
4. At a minimum, all liquid manure samples collected should be analyzed for percent dry matter, total nitrogen, percent $\text{NH}_4\text{-N}$, percent $\text{NO}_3\text{-N}$, phosphorus, potassium, and sulfur.
5. If manure sample results have a dry matter (DM) content less than 2.0% and the percent ammonium (NH_4^+) is greater than 75% of the total N, Draves Dairy may use the following equation to adjust the first year available nitrogen when applications are injected or incorporated within 1 hour:

$$\text{First-Year Available N} = \text{NH}_4\text{-N} + [0.25 \times (\text{Total N} - \text{NH}_4\text{-N})]$$

6. Draves Dairy shall record daily manure applications by using form 3200-123A or other documentation with equivalent information. This information shall be retained at the farm and provided to the department upon request.
7. Draves Dairy shall annually submit a spreading report that summarizes the land application activities listed under NR 243.19(3)(c)5., Wis. Adm. Code and contained in form 3200-123.

WINTER SPREADING

8. Liquid manure applications during winter conditions, as defined by NR 243.14(7), Wis. Adm. Code, are prohibited except for emergency applications.
9. Areas within the following field(s) are approved for winter spreading solid manure, emergency applications of liquid manure and frozen liquid manure:

245-6	246-4	1276-1	1448-8
14028-5	14028-7	14028-8	Aide

10. Winter applications of liquid manure shall only occur under emergency situations, after notifying the Department and receiving verbal approval.
11. Liquid applications shall be limited to 3,500 gallons per acre or 30 lbs. P per acre, whichever is less, on slopes 2-6% and 7,000 gallons per acre or 60 lbs. P per acre, whichever is less, on slopes 0-2%. Winter applications of solid manure shall be limited to 60 lbs. P per acre.
12. No manure applications may occur during the “high risk runoff period” of February 1 to March 31 pursuant to s. NR 243.14(6)(c) and NR 243.14(7)(c), respectively.

HEADLAND STACKING

13. No headland stacking sites were requested for approval.

MANURE & PROCESS WASTEWATER IRRIGATION

14. Irrigation of manure or process wastewater is prohibited.

This conditional approval does not limit the Department’s regulatory authority to require NMP revisions (based upon new information or manure irrigation research findings) or request additional information in order to confirm or ensure your farm operation remains in compliance with NR 243 and your WPDES permit conditions. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the Department may ask you to provide further information relating to this activity.

Please keep in mind that approval by the Department of Natural Resources – Runoff Management Program does not relieve you of obligations to meet all other applicable federal, state or local permits, zoning, and regulatory requirements.

DRAVES DAIRY CAFO PERMIT NMP REMINDERS

- Every year prior to March 31st, submit the NMP annual update that includes documentation of actual field applications during the previous year.
- Take a minimum of two liquid manure samples during both spring and fall application times to verify seasonal nutrient content of manure.
- Consider increasing the NMP land base. Draves Dairy ratio of spreadable acreage to animal units could potentially be less than one (1) during the permit term. Having less acreage than animal units often provides challenges to nutrient management such as:
 - Higher than desired soil test P levels.
 - Nitrogen applications that frequently exceed University of Wisconsin recommendations.
 - Increased runoff risk due to elevated manure application rates.

If you have any questions regarding this approval I can be reached at 715-214-8576 or Todd.Prill@Wisconsin.gov

Sincerely,



Todd Prill
Certified Crop Advisor (CCA)
WDNR Agricultural Runoff Specialist

cc: Claire O'Connell WDNR Agricultural Runoff Specialist (Claire.OConnell@Wisconsin.gov)
Laura Bub, WDNR Watershed Field Supervisor (Laura.Bub@Wisconsin.gov)
Chris Clayton, WDNR Ag Runoff Section Chief (Christopherr.Clayton@Wisconsin.gov)
Aaron O'Rourke, WDNR Nutrient Management Program Coordinator (Aaron.Orourke@Wisconsin.gov)
Tony Salituro, WDNR Intake Specialist (Anthony.Salituro@Wisconsin.gov)
Jeff Kreider, Water Resources Engineer (Jeff.Kreider@Wisconsin.gov)
Katie Abbott, County Conservationist (Katherine.Abbott@iowacounty.org)
Lynda Schweikert, Grant County LCD Administrator (lynda.schweikert@wi.nacdnet.net)
JoAnn Opsal, Popple Consulting (jopsal@tcc.coop)
Andrew Skwor, MSA Professional Services (Askwor@msa-ps.com)
File



September 29, 2021

FILE REF: R-2021-0120a
WPDES Permit #: WI-0066851

Josh Draves
Draves Dairy
6036 State Road 80
Highland, WI 53543

Subject: Revised Evaluation Review for Draves Dairy T7N, R1E, Section 4 in Highland Township, Iowa County – FURTHER ACTIONS ARE REQUIRED

Dear Mr. Draves:

This letter is to inform you that the Department received on May 21, 2021 the evaluation for the waste storage facilities, feed storage, and transfer system, submitted under certification by Jenise Anderson, P.E., MSA Professional Services on behalf of Draves Dairy. Additional information was provided to the Department concerning the number of animal units and the changes made to the amount of manure production. Jenise Anderson evaluated the facilities listed below based on applicable NRCS Standards and ch. NR 243 Wis. Adm. Code. This revised letter supersedes the evaluation review letter sent on September 20, 2021 and includes a review of the days of storage. No other changes were made to the original contents.

In accordance with s. 243.16(1), Wis. Adm. Code, when submitting an evaluation for an existing facility the evaluation shall include, at a minimum, the following information:

- (a) A narrative providing general background and operational information on existing facilities and systems.
- (b) Available post-construction documentation including the date and materials of construction.
- (c) For facilities or systems that are part of the production area, an assessment of the ability of the facility or system to meet the production area requirements in s. NR 243.13, the adequate storage requirement under s. NR 243.14 (9), and accepted management practices.
- (d) An assessment of the ability of the facility or system to meet the applicable design requirements identified in s. NR 243.15.
- (e) Any proposed actions to address issues identified as part of the evaluation.

The Department has reviewed the evaluation for the reviewable facilities listed below and finds that they meet the requirements for submission listed above, specifically in accordance with s. NR 243.16(1), Wis. Adm. Code. Jenise Anderson's conclusion of the evaluation is that the reviewable facilities listed below meet the ch. NR 243 requirements. In order to confirm the conclusion, the Department found insufficient details necessary to justify the conclusion.

Waste Storage Facility #1: The 170 ft x 100 ft x 10 ft concrete vertical wall waste storage was constructed in 2012. It has a total volume of 1,196,320 gallons and an MOL volume of 1,011,710 gallons.

- Submit documentation that assesses the ability of the facility to meet s. NR 243.15(3), Wis. Adm. Code.
 - The evaluation does not state the depth of liquids within the waste storage when the evaluation was conducted.
 - The evaluation does not state where the process wastewater (feed storage runoff) will be stored for both interim and permanent runoff controls. If WSF #1 will be used, the evaluation will also need to meet ch. NR 213, Wis. Adm. Code.

Transfer System:

- Submit documentation that assesses the ability of the facility to meet s. NR 243.15(4), Wis. Adm. Code.
 - Reception tanks #1 and #2 are identified within the evaluation, but the evaluation does not provide observations and pump information.

Feed Storage and Runoff Controls: The feed storage area has an asphalt working surface with 6-8 inches of aggregate with a concrete apron.

- Submit plans and specifications to construct a feed storage area in accordance with s. NR 243.15(2) and (9), Wis. Adm. Code.
 - The evaluation indicates that plans and specifications are intended to be submitted to expand the feed storage area and construct permanent runoff controls.
 - The evaluation states, “There is currently a small dug out runoff collection basin off the north corner of the feed storage, which is not managed and is not likely to hold the volume of the 25 year 24 hour storm or the volume of leachate that is produced from the feed on the pad.”
 - The unmanaged collection basin and areas adjacent to the basin must be abandoned in accordance with s. NR 243.17(7), Wis. Adm. Code.
 - The evaluation did not provide a site map or ground elevations that would indicate runoff flow paths. Any production area runoff contaminated soils in the basin’s adjacent areas and flow path should be treated as a spill.
- Submit documentation that assesses the ability of the facility to meet s. NR 243.15(2) and (9), Wis. Adm. Code.
 - The evaluation states, “As an interim practice, the farm is proposing to expand this earthen basin and place a liner that meets NRCS 520 (10/17). The intention is that the basin would be large enough to collect the leachate off of the feed storage pad and a volume of rainfall runoff from the pad, with a pump to transfer the runoff to a tanker parked on the feed pad adjacent to the basin. The main differences between this proposed interim practice and the existing dug out collection basin are the verification of liner material and thickness, a specific and larger size, and the improved management with the pump and tanker to prevent nutrient dense overflow.”
 - More details are needed concerning the proposed interim practice of a concrete lined pond. An interim design report is to be submitted to the CAFO specialist identified below. The report is to include a site map that identifies where all interim practices will be located, drawings that show how the practices will be constructed or installed, and a narrative that includes, where, what, when and how the practices will be constructed and/or installed. This is to ensure that the practices do not create an additional problem that it’s intended to resolve. Note, any practices that will be used in proposed permanent practices will be required to be evaluated per s. NR 243.16(1), Wis. Adm. Code.
 - The evaluation states, “The asphalt pad was constructed in 2011, 2015, and 2016, out of 4” of asphalt on top of 6” to 8” of aggregate. The concrete apron was constructed in 2019 with 6” of concrete on 6” to 8” of aggregate.”
 - The evaluation does not provide how this information is known.
 - The evaluation states, “No drain tile is in place.”
 - The evaluation does not state where leachate that seeps through the worksurface flows to.
 - The feed storage liner must be verified within the feed storage area footprint.

Days of Available Liquid Waste Storage: The submitted information states that Drave Dairy has 340 days of liquid waste storage based on the construction of two Pipping waste storage tanks that were approved by the Department on June 18, 2021 under DNR project number R-2021-0066. The evaluation did not provide the current number of days of storage. The following information is based on 1,440 animal units the permittee states that they currently have, based upon a collection period of 365 days.

- Because the permittee has the approval for three additional waste storage ponds the Department is providing the following calculations based on the approval letter issued by the Department.
 - With the single 170 ft x 100 ft x 10 ft deep vertical wall waste storage that has a total volume of 1,196,320 gallons and an MOL volume of 995,858 gallons, there is 34 days of storage.
 - When the 254 ft diameter x 16 ft deep Pipping 1 (Stage 2) waste storage tank with a total volume of 6,015,215 gallons and an MOL volume of 5,459,955 gallons is put into use, it will provide the permittee with ~207 days of storage.
 - When the 232 ft diameter x 16 ft deep Pipping 2 (Stage 3) waste storage tank with a total volume of 5,010,608 gallons and an MOL volume of 4,521,953 gallons is put into use, it will provide the permittee with ~336 days of storage.

- When the 232 ft diameter x 16 ft deep Pipping 3 (Stage 4) waste storage tank with a total volume of 5,010,608 gallons and an MOL volume of 4,521,953 gallons is put into use, it will provide the permittee with ~455 days of storage.
- When submitting documentation that assesses the ability of the facility to meet s. NR 243.15(3)(i) to (k), Wis. Adm. Code, provide the following.
 - For each waste storage facility provide:
 - The waste storage facility side slope ratios, depth, bottom or top surface areas or the length and width of either the bottom or top.
 - Depth of solids and liquids unable to be removed. This can be zero if all solids and liquids can be removed.
 - Provide tables and/or spreadsheets that include storage volume calculations and all inputs to the waste storage facilities:
 - Net precipitation on liquid manure storage surfaces.
 - Total and Maximum operating level (MOL) volumes and MOL depth.
 - ◆ Manure generation, bedding, number of animals for each animal type, the animal type, and wash water.
 - ◆ Area or dimensions of each feed storage area and total tons of feed stored. Also identify if any runoff flows directly into a waste storage facility.
 - ◆ Area or dimensions of each animal/feed lot and stacking pads. Also identify if any runoff flows directly into a waste storage facility.
 - ◆ Area of aprons, roads, etc. that contribute to runoff that is collected in a liquid manure waste storage pond. Also identify if any runoff flows directly into a waste storage facility.
 - Ensure that the provided calculations include up to a 25-year / 24-hour storm event and that days of storage volumes are based on the MOL volume.
 - Provide the maximum number of animals during any 180-day period.
 - Process wastewater being stored in process wastewater only waste storage ponds are not included in days of storage calculations. However, this information needs to be included so that the Departments knows that this waste is being accounted for.

Evaluation Identified Resolved Items:

- Old Parlor: The pasteurization discharge pipe is no longer discharging, and the old parlor is completely disused.
- North Barn Lot: The North Barn and its associated lot have been depopulated and will no longer house animals.
- Hansen Farm (Satellite): The Hansen Farm satellite has been depopulated. The Farm is requesting that this satellite not be included in their WPDES permit if it remains unused.

Evaluation Identified Action Items:

- The Farm will be managing winter solid manure with a solids stacking area that drains into the existing WSF #1. This stacking area is proposed, along with three liquid manure storages, to be constructed in 2021 and 2022.
- The Farm is also proposing to add onto the feed storage area and construct a permanent process wastewater collection facility, though plans and specs have not yet been drafted. As part of the proposed construction in 2021 the farm will be adding milking and dry cows.

Previous DNR Identified Action Items: A site visit conducted on August 20, 2020 identified the following:

- From the DNR site walk over: The pasteurization discharge piped to the southeast corner of the outdoor calf hutch area must addressed as soon as possible. Until the old parlor is completely disused, interim controls need be installed to prevent waste from entering the ditch observed to the south of the production area.
 - This has been resolved as discussed above.
- Items that will be required prior to permit issuance as identified in the DNR site walkover: Interim runoff controls for the feed storage area should be submitted to the department and will be included as a schedule item during the permit term. Operational interim measures will be required at permit issuance.

- Waste storage pond #1 needs to be evaluated when the pond is emptied.
- The feed storage bunker liner must be verified along with the flow of leachate that passes through the asphalt work surface and into the drainage layer.
- An abandonment plan for the leachate collection basin must be submitted.
- Contaminated soils from the feed storage area should be cleaned up as if it were a spill.

In accordance with s. NR 243.16(3), the Department requires additional practices or actions based on the Department's review of the submitted evaluation for the previously constructed structures or systems. This may include (1) additional technical analysis, modeling or monitoring to demonstrate compliance or (2) installation, replacement or upgrade of systems or structures in order to ensure compliance with requirements in ss. NR 243.13 and 243.15, prevent exceedances of groundwater or surface water quality standards or to prevent impairments to wetland functional values.


Due to the insufficient details needed to justify the conclusion, the evaluation must be revised and resubmitted in its entirety via the DNR's e-Permitting system at <http://dnr.wi.gov/permits/water/>. Subject to the WPDES permit, if plans and specifications are required, they must be submitted via the DNR's e-Permitting system according to the due dates within the Schedules section of the WPDES permit or enforcement schedule. If these due dates cannot be met, then the department will work with you to develop a plan to meet the schedule requirements in the permit or enforcement schedule. Questions concerning the review may be directed to Jeff Kreider, and questions concerning timelines and permit issues may be directed to the DNR CAFO Specialist. (Contact information at the end of this letter.)

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to WIS. STAT. §§ 227.52 and 227.53, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to WIS. STAT. § 227.42, you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN. CODE § NR 2.03. The filing of a request for a contested case hearing does not extend the 30-day period for filing a petition for judicial review.

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES



Bernie Michaud, P.E.
CAFO Engineer Supervisor
Watershed Management Program



Jeff Kreider
Water Resources Engineer
Watershed Management Program

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Laura A Bub; DNR-South Central Region
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June 18, 2021

FILE REF: R-2021-0066
WPDES Permit #: WI-0067831

Josh Draves
Draves Dairy
6036 State Road 80
Highland, WI 53543

Subject: Conditional Approval of Plans & Specifications for Three Waste Storage Facilities, Solids Stacking Area, Waste Transfer System, and Grant of Waiver for Well Setback at Draves Dairy in T7N, R1E, Section 4, Highland Township, Iowa County

Dear Mr. Draves:

This letter is to inform you that the Wisconsin Department of Natural Resources (Department) has reviewed and conditionally approves the above referenced plans and specifications, submitted under certification by Jenise Anderson, P.E., MSA Professional Services, Inc. and received on April 8, 2021 with revisions received through June 14, 2021. The review was conducted in accordance with s. 281.41, Wis. Stats., chs. NR 151, NR 213 and NR 243, Wis. Adm. Code, and applicable NRCS Standards. The attached engineering report describes the project, lists standards that apply and provides compliance analysis. Questions may be directed to the assigned regional staff or the review engineer Rob Davis (contact information is at the end of this letter).

Proposed Project: The proposed project includes the following facilities that are reviewable under s. NR 243.15, Wis. Adm. Code: Three Waste Storage Facilities, Solids Stacking Area, and Waste Transfer System

Conditions of Approval: The plans and specifications for project number R-2021-0066 are hereby approved and subject to chs. NR 151 and NR 243, Wis. Adm. Code, and the conditions listed below:

1. **Revisions:** If revisions are made to the approved plans and specifications, revised plans and specifications shall be submitted for approval modification, in accordance with ss. NR 108.03 and NR 108.04, Wis. Adm. Code, and s. 281.41(1)(c), Wis. Stats. Submit revised plans and specifications via the Department's e-Permitting System. **Note:** This includes revisions for local permitting. If a formal approval modification may not be warranted, contact the review engineer to confirm.
2. **Approval Period:** In accordance with ss. NR 243.15(1)(a)1., and NR 108.04(2)d., Wis. Adm. Code, if construction is not commenced within 2 years from the approval date, the approval is void, and a new approval must be obtained prior to commencing construction.
3. **Notification:** Prior to construction and when construction is complete, notify the Department's regional contact and county contact provided a copy of the approval (contact information is at the end of this letter).
4. **Inspection:** During the construction of critical components, inspection shall be performed by a Wisconsin registered professional engineer or other qualified third party (excludes the owner and construction contractor and their employees).
5. **Post-Construction Documentation:** In accordance with the permit, a post-construction report must be submitted to the DNR's e-Permitting website (<http://dnr.wi.gov/permits/water>) within 60 days of completing construction. The report must include documentation specified by s. NR 243.15(10), Wis. Adm. Code.

Grant of Waiver: In accordance with s. NR 243.15(1)(c), Wis. Adm. Code, a waiver is hereby granted from s. NR 243.15(1)(a)2., Wis. Adm. Code, to allow a proposed manure auger channel to be located approximately 130 ft from a groundwater supply well, based on justifications set forth in the proposed

plans and specifications. Additionally, a proposed 5,000 gallon reception tank along with the associated waste transfer pipe will be located approximately 220 ft from the same groundwater supply well and are also included in the waiver.

Limitation of Approval: The Department reserves the right to order changes or additions should conditions arise making this necessary. This approval is not to be construed as a determination on the issuance of a Wisconsin Pollutant Discharge Elimination System Permit or opinion as to the ability of the proposed system to comply with effluent limitations in such a permit, approval of an Environmental Impact Statement that may be prepared, or approval for any activities requiring a permit under chs. 30 or 31, Wis. Stats. Where necessary, plans and specifications should be submitted to the Department of Safety and Professional Services or other state or local agencies to ensure conformance with applicable codes or regulations of such agencies.

Tax Treatment: Tangible personal property, that becomes part of a waste treatment of pollution abatement plant or equipment, may be exempt from sales tax under s. 77.45(26), Wis. Stats. Similarly, property purchased or constructed as a waste treatment facility and used for industrial waste treatment may be exempt from general property taxes under s. 70.11(21), Wis. Stats. A prerequisite to exemption is filing a statement on prescribed forms. To obtain the forms, and information about this sales tax exemption, please contact the Department of Revenue, P.O. Box 8933, Madison, WI 53708, or check their website <http://www.revenue.wi.gov/>.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to WIS. STAT. §§ 227.52 and 227.53, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to WIS. STAT. § 227.42, you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN. CODE § NR 2.03. The filing of a request for a contested case hearing does not extend the 30-day period for filing a petition for judicial review.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary



Bernie Michaud, P.E.
CAFO Engineer Supervisor
Watershed Management Program

Enclosures: Wisconsin DNR Engineering Report

Email:

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WISCONSIN DEPARTMENT OF NATURAL RESOURCES ENGINEERING REPORT**GENERAL INFORMATION****Farm Name:** Draves Dairy**WPDES Permit#:** WI-0067831**Location Address:** 6036 State Road 80, Highland**DNR Project #:** R-2021-0066**Engineering Plans Certified by:****Initial Submittal:****Revised Submittal(s):**

Jenise Anderson, P.E.

April 8, 2021

May 24, June 11, and June 14, 2021

Site Assessment: Geographical features of the site include soils that are generally lean clays. The nearest stream is approximately 600 ft to the southwest and is an intermittent stream. The nearest wetland is approximately 1,700 ft to the southwest of the proposed construction area and is a very small wetland pocket. No karst features are known to exist within 1,000 ft of the proposed facilities or systems. A ground water supply well is located approximately 130 ft from a proposed manure auger channel and within approximately 220 ft of a proposed 5,000 gallon reception tank along with the associated waste transfer pipe and are receiving a waiver from the 250 ft setback requirement as part of this approval.

Soil investigations were performed on November 18, 2020 and April 1, 2021 consisting of 12 soil borings and 5 test pits in the proposed project area, which found the primary subsoils consist of lean clays (CL), silty sand (SM), and clayey sand (SC) with a fines content in the range of 80-95% and plasticity index ranging from 28-59. Bedrock was found and it will be necessary to excavate small pockets of bedrock out in some locations to meet separation distances. Saturation was not found.

Proposed Facilities:

Waste Storage Pipping 1 (Stage 2): The proposed design was submitted to meet NRCS 313 (10/17R) and NRCS 522 (10/17R). The design is in compliance with s. NR 243.15(3), Wis. Adm. Code. All 3 Pipping tanks will be located near the existing WSF. The existing WSF is considered Stage 1. The Pipping Tanks will be connected with 12" equalizer pipes. Below is a summary of what is proposed.

- The proposed Pipping 1 (Stage 2) will be 16 ft vertical walled circular tank and 254 ft inside diameter with a ramp. The walls and are designed with 14" thick concrete. The slab-on-grade is designed with 5" thick concrete and has a design capacity of 16,800 pounds axle load
- The compressive strength of the concrete is 4,000 psi for walls and floor. Design calculations show that 4,000 psi is sufficient for the walls and 5,000 psi is not necessary.
- Soil bearing pressure is 2,000 PSF minimum.
- The proposed storage will have a total and maximum operating level (MOL) volume of 6,015,215 and 5,434,576 gallons respectively.
- The floor elevation will be 1181.35 ft and the MOL elevation will be 1195.80 ft.
- Ramp slope will be 8:1.

Waste Storage Pipping 2 (Stage 3): The proposed design was submitted to meet NRCS 313 (10/17R) and NRCS 522 (10/17R). The design is in compliance with s. NR 243.15(3), Wis. Adm. Code. Below is a summary of what is proposed.

- The proposed Pipping 2 (Stage 3) will be 16 ft vertical walled circular tank and 232 ft inside diameter with a ramp. The walls and are designed with 14" thick concrete. The slab-on-grade is designed with 5" thick concrete and has a design capacity of 16,800 pounds axle load
- The compressive strength of the concrete is 4,000 psi for walls and floor. Design calculations show that 4,000 psi is sufficient for the walls and 5,000 psi is not necessary.
- Soil bearing pressure is 2,000 PSF minimum.
- The proposed storage will have a total and maximum operating level (MOL) volume of 5,010,608 and 4,521,953 gallons respectively.
- The floor elevation will be 1181.35 ft and the MOL elevation will be 1195.80 ft.
- Ramp slope will be 8:1.

Waste Storage Pipping 3 (Stage 4): The proposed design was submitted to meet NRCS 313 (10/17R) and NRCS 522 (10/17R). The design is in compliance with s. NR 243.15(3), Wis. Adm. Code. Below is a summary of what is proposed.

- The proposed Pipping 3 (Stage 4) will be 16 ft vertical walled circular tank and 232 ft inside diameter with no ramp. The walls and are designed with 14" thick concrete. The slab-on-grade is designed with 5" thick concrete and has a design capacity of 16,800 pounds axle load
- The compressive strength of the concrete is 4,000 psi for walls and floor. Design calculations show that 4,000 psi is sufficient for the walls and 5,000 psi is not necessary.
- Soil bearing pressure is 2,000 PSF minimum.
- The proposed storage will have a total and maximum operating level (MOL) volume of 5,057,236 and 4,568,581 gallons respectively.
- The floor elevation will be 1181.35 ft and the MOL elevation will be 1195.80 ft.

Waste Transfer System: The proposed design was submitted to meet with NRCS Standard 634 (1/14). The design is in compliance with s. NR 243.15(4), Wis. Adm. Code.

- The manure transfer channel made of 2 ft wide x 2 ft high with 8-inch thick reinforced concrete walls and 8-inch thick reinforced concrete floor if cast-in-place or it will be a Huffcutt Concrete precast structure.
- Waste from the transfer channel enters a Wieser W5000 precast reception tank that is DSPS approved.
- Waste from the 5,000 gallon reception tank will be transferred to a proposed DSPS approved Wieser W20000 reception tank via 550 ft of 8" SDR 21 PVC pipe with a Houle 7.5 HP Electromix Piston Pump. The operating pressure will be 4.0 PSI.
- Waste from the proposed 20,000 gallon reception tank will be transferred to the existing Stage 1 WSF via 290 ft of 8" SDR 21 PVC pipe with a Houle 7.5 HP Electromix Piston Pump. The operating pressure will be 3.9 PSI.
- Waste from the proposed solids stacking pad will be transferred to Pipping tank 1 via approximately 90 ft of 12" AASHTO M294 Type S pipe via gravity flow.
- The existing Stage 1 WSF will be connected to Stage 2, Stage 2 will be connected to Stage 3, and Stage 3 will be connected to Stage 4. All connections will be made with twin 12" SDR 26 pipe.

Manure Stacking Pad: The proposed design was submitted to meet NRCS 313 (10/17R), NRCS 522 (10/17R) Table 2, Column A, and soil sub-liner NRCS 522 (10/17R) Table 2A, Column C. The design is in compliance with s. NR 243.15(3), Wis. Adm. Code. Below is a summary of what is proposed.

- The proposed manure stacking pad will be 32 ft x 146 ft with a 6-inch thick reinforced reduced seepage concrete with waterstop floor.
- It is proposed to be constructed on the west side of existing freestall barn #2 and just east of the existing WSF (stage 1).
- All runoff from the stacking pad is proposed to flow Pipping 1 (stage 2) via a 12" pipe.

DAYS OF AVAILABLE LIQUID WASTE STORAGE: The submitted information states that Draves Dairy will have 341 days of liquid waste storage based on the volumes listed in the table below with respect to s. NR 243.15(3)(i) to (k), Wis. Adm. Code. The current number of animal units provided for the calculation is [Animal Units]. The liquid waste volumes are based on the NRCS spreadsheet and other estimated or calculated values and based upon a collection period of 365 days.

Total Liquid Waste Storage:	17,279,379 gallons
Total Solids Storage	316,077 gallons
Total 25-yr, 24-hr Precip. on Storage	586,621 gallons
Total 25-yr, 24-hr Collected Runoff	18,555 gallons

Total Freeboard Vol.	1,137,380 gallons
Total MOL Liquid Waste Storage:	15,220,742 gallons

Manure and Bedding:	10,956,170 gallons
Parlor Wastewater	3,485,400 gallons
Net Precipitation on Storage Surfaces:	1,750,811 gallons
Total Stacking Pad Runoff Collected:	111,100 gallons
Total Liquid Waste Stored Below the MOL	16,303,482 gallons

PURPOSE OF THIS REPORT: This report documents review of plans and specifications for each structure or practice indicated below, including findings regarding the structure or practice's compliance with applicable standards. The reviewer considered if management and site assessment were conducted, documented, and reflected in the final design, and if proper construction and related plans (operation and maintenance, inspection, erosion control if applicable) were provided, and demonstrated compliance with applicable rules standards.

DECISION RECOMMENDATION: Based on my review completed on June 16, 2021, the proposed plans and specifications meet ch. NR 243, Wis. Adm. Code, and applicable NRCS Standards. Therefore, I recommend the plans and specifications be approved.



Robert Davis, P.E.
Water Resources Engineer